

REMARKS

Claims 1-9 are presently pending in the application.

The Examiner has again rejected claims 1-3 and 6-9 under 35 U.S.C. § 102(e) or 35 U.S.C. § 103(a) as being anticipated by or unpatentable over U.S. Patent No. 6,444,351 of Goto either alone or in combination with U.S. Patent No. 5,595,841 of Suzuki, for the reasons of record. Claims 4 and 5 have been objected to as being dependent on a rejected base claim but would be allowable if rewritten in independent form.

In response to Applicants' previous argument that Goto does not disclose a particulate binder, since the disclosure of a slurry does not mean that the binder is particulate, the Examiner cites the *American Heritage Dictionary* definition of the word "slurry" as a mixture of a liquid and any of several finely divided substances, such as clay particles. The Examiner concludes that in order for a slurry to exist, its solid component must be particulate, and adds that the presence of additional components does not negate the particulate nature of any one component.

With respect to Applicants' previous argument that Goto does not teach the advantages of a particulate binder, the Examiner argues that a § 102 rejection (claims 1 and 2) does not require a disclosure of advantages or any other reason for the use of any given component. As to the rejection under § 103 (claims 3 and 6-9), the Examiner argues that the claims do not recite any specific binder and are thus not commensurate with the comparisons pointed out by Applicants. These rejections are again respectfully but strenuously traversed for the reasons set forth in the previous response and the additional reasons set forth in detail below.

With respect to the binder and the meaning of the word "slurry," it is submitted that the Examiner has misinterpreted or misunderstood the Goto reference. Goto describes in col. 8, lines 34-51 (Example 1) that 91 parts by weight of LiCoO_2 , 6 parts by weight of graphite and 3 parts by weight of polyvinylidene fluoride (PVDF) serving as a binder are mixed with one another and then dispersed in N-methyl pyrrolidone (NMP), thus preparing a slurry which was applied to two sides of a positive electrode collector and dried so that an active material layer was formed. Applicants do not dispute that a slurry contains particles nor that Goto prepared a slurry. However, not all of the ingredients of the slurry need to be in particulate form for a slurry to exist.

In general, an electrode active material comprises inorganic particles that do not dissolve in a dispersion medium. This is the reason that the mixture of the electrode material and the dispersion medium is called a slurry. In the case of Example 1 of Goto, the slurry contains LiCoO_2 as the electrode active material and graphite as a conductive material. The LiCoO_2 and conductive material are retained in particulate form in the dispersion medium, so that the term "slurry" is used to describe this mixture.

Nevertheless, the use of the term "slurry" does not suggest or imply that the binder is also particulate. In fact, it is conventional in the art to use a binder which also serves as a thickener for the dispersion medium, and hence the binder needs to dissolve in the dispersion medium. One skilled in the art will readily recognize that the binder in this Example (PVDF) will dissolve in the dispersion medium (NMP). This was also the case in Comparative Example 1 at pages 24-25 of the present application, where PVDF was used as the binder. Since PVDF was soluble in the dispersion medium (NMP), the thickening agent (BM700H used in Examples 1-3) could be dispensed with (see bottom of page 24 of the present specification).

Accordingly, contrary to the Examiner's arguments, Goto does not teach, suggest or imply the use of a particulate binder. Therefore, the rejections based upon Goto are improper and should be withdrawn.

Further, with respect to the advantages of the particulate binder, the Examiner evidently misunderstands Applicant's reliance on these advantages. Applicants' reliance on the criticality and unexpected results of the particulate binder was to negate any motivation of one skilled in the art to combine Goto with Suzuki (see page 6 of the previous response). Even if the structure of the presently claimed invention were obtained by the combination of Goto and Suzuki (which Applicants dispute for the above reasons), there would be no motivation to combine Goto and Suzuki, since Goto does not teach or recognize the advantages of using a particulate binder. That is, no one would be motivated to combine the references, except a person who has found the advantages of the particular binder, namely that it increases the active material density dramatically over the prior art.

The Examiner's argument that the advantages are not commensurate with the comparisons in the specification, because claims 3 and 6-9 do not recite any specific binder, is misplaced. Thus, Applicants are not relying upon the advantage of a specific binder or binders, but rather the advantage of particulate binders as used in Examples 1-3 verses a non-particulate binder (PVDF) as used in Comparative Example 1.

Accordingly, the combination of Goto with Suzuki is also improper for the above reasons and should be withdrawn. Reconsideration and withdrawal of the rejections under 35 U.S.C. § 102(e) and § 103(a) and an early Notice of Allowance are respectfully requested.

Respectfully submitted,

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